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The Value Chain Case for Health Care Reform—A conference summary

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On April 24–25, 2007, the Federal Reserve Bank of Chicago and the Detroit Regional Chamber sponsored a two-day forum examining a "value chain" perspective of health care delivery in the U.S. The program discussed how a value chain evaluation might lead to improvement in health care quality, reduction in costs, and increased user accessibility.

Materials presented at the conference are available at www.chicagofed.org/news_and_conferences/conferences_and_events/2007_detroit_healthcare_agenda.cfm.

Health care costs in the U.S. are high and rising rapidly. The U.S. spent approximately $2 trillion on health care in 2005, nearly 15% of real gross domestic product (GDP)—up from 5.9% in 1965 and currently among the highest in the world. More importantly, costs are rising rapidly with no hint of any slowing. Since 1990, medical care costs as measured by the Consumer Price Index (CPI) have risen at a compound annual rate of 4.6%, nearly 2 percentage points faster than the overall CPI. Without effective reforms in the health care system, such trends are likely to continue as the U.S. population ages and the scope of medical technology continues to broaden.

In Michigan, providing more cost-effective and customer-attuned health care is especially important as the automotive industry—the state's primary industry—bears the hefty legacy health care costs of its retirees. This also implies that efficiency improvements in health care may have profound effects on Michigan's competitiveness. Currently, the state is burdened with both a slowly growing economy and an aging population. At the conference, academics, health care providers, insurers, employers, labor union representatives, and representatives of various governmental authorities gathered to discuss one particular approach to addressing the health care challenges in Michigan and across the nation—the "value chain."

Michael Porter has popularized the term value chain to mean the entire production process from the input of raw materials to the output of the final product consumed by the end-user.[1] It is called a value chain because each link in the process adds some value before the product or service is delivered to the ultimate customer. Along the way, the particular actors involved—which may include government agencies, nonprofit organizations, and other agents—and the arrangements and incentives under which the process takes place help to determine the cost and quality features of the final product or service. For value chains involving public sector inputs, such as health care, there are myriad policy options, cooperative agreements, regulatory regimes, and institutional arrangements available at various stages of the value chain. Such arrangements characterize the quality, cost, and variety of the final product or service. In contrast, for many goods and services supplied by private firms, the value chain process, while complex, has its elements chiefly fashioned within or between private firms, operating with relatively fewer constraints than public sector entities.

In the private sector, the value chain of today's automotive industry is often held up as an ideal. Today, the automotive value chain is a segmented string of automotive assembly firms and autonomous parts suppliers, with each being highly specialized and focused on particular core competencies. Competition among firms at each stage imposes cost-effective production and product innovation.

Two alternatives were presented as to who should be the ultimate decision-maker in health care: the consumer (patient) or the provider (hospital/physician).

Despite this specialization and competition, greater overall cost-effectiveness of the final automobile is also brought about by particular cooperative relations among firms along the value chain. Given the level of cooperation in this system, quality and competitive price information are communicated quickly upstream in the value chain. Consumers downstream also have ready information on the final product's quality and price. This availability of information along the value chain imposes market discipline on many competing automakers, which must in turn exert discipline on their suppliers, while also acting cooperatively on specific preassembly activities, such as automotive design and production planning.

In contrast to today's automotive market, the partnerships in the markets for health care services have not given rise to cost-efficiencies and delivery innovation. Fundamentally, many health care services are complex and only purchased intermittently, if at all. This means that, often, consumers are not well informed in their purchase decisions. Even if the consumer understands what to shop for, information on cost and quality among providers is often sparse. Many needs for health care services are associated with costly and unpredictable episodes of illness, so that the services are often paid for under insurance arrangements rather than with direct fees for services. But insurance often gives rise to especially difficult "moral hazard" issues in the health care arena. That is, this "third party payer" arrangement may mean that consumers are motivated to overpurchase some types of health care services or to avoid price shopping that they might otherwise engage in if they were paying directly. Physicians and hospitals often act as informed agents for consumers of sophisticated health care services, and they too may not be strongly motivated to ration services on the basis of cost in third party payer systems or to tightly control the cost-efficiency of their own operations. Also, a significant part of health care responsibilities may fall on the consumers so that their behaviors in prevention, self-medication, and lifestyle must often be considered in achieving desired outcomes. So, too, in the U.S., governments and nonprofit agencies commonly serve as direct health care providers or as insurers and regulators. Private sector employers often include health care insurance as part of their employee compensation package. Such arrangements thereby introduce yet more actors into health care transactions and payments.

Value chain overview

To open the proceedings, Robert Burns, Wharton School of the University of Pennsylvania, gave an overview of the value chain approach, noting that this approach has not been effective in the health care arena. Some of the reasons include an inability to create and coordinate strategic alliances, a lack of information regarding value/cost at each link, and an insufficient sharing of knowledge in health care. Attempts at vertical integration, whether initiated by providers, insurers, or employers, have largely proved ineffective, probably because the coordination costs exceeded the gains from agglomeration. The only partial success at vertical integration has been at the U.S. Department of Veterans Affairs' Veterans Health Administration—an organization that by its very nature has greater control over the whole process from individual payer to service provider.

Burns also suggested that better technology should be used in many parts of the health care value chain to create greater efficiencies. He said that approximately $554 billion, or 28%, of the nearly $2 trillion spent on health care is currently technology-related; and this area of spending is growing rapidly.

According to Burns, currently, physicians have the central role in the health care value chain. They are the decision-makers for many products, such as medical devices and drugs, as well as for services at hospital-based programs and alternative sites, such as outpatient clinics. As a result, physicians' preferences are the focus of attention by medical equipment and drug producers, and they are probably the key determinant of value. But Burns sees an increasing role for the payer in the value chain. Through an expanded collection of data on cost, utilization, and product and service performance, he argued that efficiencies and cost savings can be discerned and the information dispersed to the health care providers and producers—and ultimately, to consumers. While there has been a very recent movement to gather data on the quality and cost of medical services, especially those of hospitals, there is still a dearth of comparative information on health care. Burns stated that the patient needs to be more active in the value chain process, particularly as an informed purchaser of goods and services.

Pros and cons of value chain

Uwe E. Reinhardt, Princeton University, questioned whether the value chain concept can be very helpful to the health care industry until society decides who should determine value. The concept of the value chain can be a highly useful analytical tool in many contexts, but it runs into a host of conceptual and methodological problems if applied to health care. The driving force for change in well-functioning value chains is competition to provide the best value to the ultimate customer. For health care in the U.S., two important questions in applying this framework are: Who should set the "value" in the value chain; and how should

the value of services be determined (that is, by market forces or by some other process)? These are open questions because health care is often viewed by some as a social good to be distributed to all who need it regardless of ability to pay, but by others as a private good. Under our current system, there are several potential candidates to be the ultimate customer, Reinhardt said, including the individual patient, the insured person, the insurance company, the taxpayer, and the employer. Since they all have varying motivations and requirements, there will not necessarily be an alignment of values along the value chain. He buttressed his argument by noting that current spending on health care varies across regions and procedures by a wide margin. For example, U.S. personal health care spending per capita in 1998 averaged $3,759, but it ranged from a low of $2,731 in Utah to a high of $4,810 in Massachusetts.

Dean G. Smith and Leon Wyszewianski, both of the University of Michigan School of Public Health, and Jeffrey R. Taylor, Michigan Public Health Institute (MPHI), discussed the merits of the health care value chain approach. Smith noted that the purpose of the health care system is "not to minimize overall or total expenditures but to deliver value to patients, that is, better health per dollar spent." He argued that greater attention should be paid to the patient, particularly the financial incentives needed to influence patient behavior. As an example, he noted that, while lower co-payments tend to increase usage of drugs (statins in his example), there is a marked decline in usage by individual patients over time; by year three, only 10% of patients continue using statins (as directed by their physicians) if the co-payment is greater than $20, but slightly more than half continue when payments are less than $10. In this instance, there is apparently a need to provide patients with an incentive to continue using medication. More generally, medication charges should be better aligned with potential future costs. An implication of this approach, to minimize total costs over a patient's lifetime, is that someone who is at low risk might have a high co-payment for treatment, while someone at high risk should pay little or maybe even receive a refund. Smith noted that the University of Michigan, in its role as an employer, is experimenting with funding similar preventive actions, which in the short run can be expensive but which in the long run may actually result in lower costs because the client base will be healthier.

Wyszewianski observed that in the current system the physician has a near monopoly in decision-making that is difficult to change in several important ways. His experience has been that physicians are not fully aware of the array of alternative approaches or procedures available; are not always fully apprised of the effectiveness of procedures; and are sometimes reluctant to implement different methods. He pointed to the Greater Detroit Area Health Council's Save Lives Save Dollars program that has adopted performance metrics and issued evidence-based guidelines as one way of lessening physicians' reluctance to change.

Taylor reported that a shift from a paper to an electronic form of recordkeeping by fiscal intermediaries, such as Michigan County Health Plans, to MPHI has reduced costs from $15 to about $6 per processing in the past two years. Electronic recordkeeping enhances the search for Medicare eligibility, thereby reducing labor costs, errors, and time-to-service. Taylor estimated that this enhancement represents 1.3 million transactions per month and reflects an annual cost saving of about $7.7 million.

Perspectives from the value chain

Scott P. Serota, Blue Cross Blue Shield Association, argued that the future health care model should be much more consumer centric and information driven. The insurer's role in such a world would be to provide consumers with information on the comparative quality of care by provider, institution, and even individual physician; to assess the various procedures; and to provide the costs of alternatives. At the center of all this would be personal health records of consumers that would be electronically portable.

Janet Olszewski, Michigan Department of Community Health, described how the state of Michigan is attempting to contain costs and maintain access. She noted that a government agency is not merely a purchaser of health services and products; rather, it is also a provider, regulator, convener (bringing interested parties together), and occupier of a "bully pulpit" for policy and process reform. One effort at cost containment involved the pooling of Michigan's Medicaid purchases with those of other states. This enabled Michigan to slow the trend growth of expenditures and to experience an absolute drop in pharmaceutical expenditures of 5.2% in 2006. Health plan contracting was another area of success. The health plans were rated on their performance in areas such as children's care and chronic illnesses (e.g., diabetes) and awarded bonuses for outstanding performance. Olszewski cited three keys to the success of health care in the future—namely, ensuring access to health care, especially to the uninsured; increasing the usage of health care information technology; and emphasizing beneficial lifestyle practices.

Vernice Davis Anthony, Greater Detroit Area Health Council, reported on her organization's efforts to improve quality, accessibility, and cost-effectiveness in the health care arena under the rubric, Save Lives Save Dollars, which was

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mentioned earlier. She attributed the program's success to the creation of a broad-based coalition consisting of business, labor, health care, government, and consumer groups, which provided a critical mass of support for change. Rather than tackling all health care issues, this multistakeholder group selected specific target issues, such as diabetes, heart attack/heart failure, and surgical site infections. The targets were selected because of the potential for improvement, opportunity to reduce costs, and availability of measurable metrics. A major achievement was the agreement by the major participating health plans to focus on a common set of metrics and to provide physicians with financial incentives for performance. Save Lives Save Dollars has created a website (www.gdahc.org/save.asp) that reports on hospital quality as well as the performance metrics. Within a year, data on health plans and the performance of individual physicians will also become available.

Peter W. Carmel, American Medical Association and New Jersey Medical School, presented the physician's perspective. Carmel said that value criteria should be focused on the patient, the ultimate receiver of benefits, and organized around medical conditions and care cycles rather than specific procedures or incidents. Further, the metric should be the value of improved health care outcome divided by cost. He argued that physicians should take the lead in making decisions on health care products and processes because they are aware of the best ways to safely cut waste, are best equipped to evaluate new technology, and can implement change. He acknowledged that, under most current arrangements, costs, procedures, and the whole care cycle are largely hidden from physicians—a shortcoming that needs correction.

Conclusion

The value chain approach offers some merit as a framework for understanding decision-making in health care provision. In business sectors like advanced manufacturing, where value chains are observed to work well, conditions are often controlled by one or more principal agents—such as competing auto assembly companies—which can manage the entire value chain so as to deliver final products of high value at low cost. At the conference, two alternatives were presented as to who should be the ultimate decision-maker in health care: the consumer (patient) or the provider (hospital/physician). To be an effective principal agent, the consumer (patient) and the enabling agencies will need considerable time and effort to build up the knowledge base and skills to access and assimilate information concerning price and quality. Insurers, nonprofits, and governments also may play important roles in assisting consumers to obtain comparative information.

Determination (and delivery) of the appropriate health care services has always entailed trust between physician and patient. Physicians have the advantages of relevant and educated information to inform health care decisions, although they are often isolated from background administrative processes that generate significant costs. Thus, like others in the chain, physicians would also benefit from a broader understanding of the total health care cycle.

The health care market is generally characterized by a lack of transparency and a shortage of information among all the agents along the value chain. Market participants need information on costs; quality of care; and availability of procedures, techniques, and equipment. Many of the presenters described ways in which they were trying to increase the quantity and quality of information. Such efforts will be useful in stimulating competition and innovation where it is most needed.

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[1] Michael E. Porter, 1998, *Competitive Advantage: Creating and Sustaining Superior Performance*, New York: Free Press.